

C. Remarks

The claims are 1 and 3, with claim 1 being independent. Claim 1 has been amended for clarification and to further define the invention. Support for the amendment may be found, for example, in the substitute specification at page 15, line 17, in the Examples, and in Table 1. No new matter has been added. Reconsideration of the claims is expressly requested.

Claims 1 and 3 stand rejected under 35 U.S.C. § 112, second paragraph, as being allegedly indefinite. Specifically, the Examiner has alleged it is unclear which version of the test method should be used to determine ten-point average roughness Rz.

In response, Applicants have amended claim 1 to delete the reference to Rz. Therefore, withdrawal of the indefiniteness rejection is respectfully requested.

Claims 1 and 3 stand rejected under 35 U.S.C. § 103(a) as being allegedly obvious from U.S. Patent No. 4,825,249 (Oki) in view of U.S. Patent Nos. 3,024,209 (Ferrigno); 3,387,071 (Cahill); and 2,926,389 (Garlington). The Examiner continues to allege that the presently claimed impregnation step does not differ from the disclosure in Oki, because even if the impregnation is recited, Oki inherently anticipates it by teaching that the coating is applied using immersing or dipping (dipping - col. 3, lines 38-43) as recited in claim 3 and discussed in the specification. In addition, the Examiner alleged that certain features relied upon for patentability, such as a temperature at which the isocyanate

is in a liquid state, is not recited in the claims. Applicants respectfully traverse the rejection for the reasons discussed below.

First, claim 1 explicitly recites that the isocyanate compound is impregnated into the blade. Thus, if a dipping method is used in the context of the claimed invention, it is clear that this dipping is conducted under conditions sufficient for impregnation to occur. Otherwise, the impregnation step recited in claim 1 is rendered meaningless.

Dipping does not inherently result in impregnation. Thus, a mere recitation of dipping in Oki is not equivalent to impregnation as claimed. Stated differently, while impregnation of the isocyanate may be achieved by dipping, dipping does not necessarily lead to impregnation (e.g., a piece of glass may be broken by a punch, but punching a piece of glass does not necessarily result in the glass being broken).

Oki does not disclose the specific conditions under which the blade is dipped into solution. This reference merely states that dipping results in an application of a coating. Therefore, at most, one can conclude that only a coating is formed, and no impregnation is suggested.

In any event, claim 1 has been amended to recite that the isocyanate compound is impregnated at a temperature from 80°C to 100°C. Oki, as mentioned above, does not disclose or suggest such conditions.

Second, claim 1 now specifically states that the isocyanate compound is 4,4'-diphenylmethanediisocyanate. This isocyanate compound has a relatively small

molecular weight, which is an important factor for impregnation into the urethane resin. To that end, the instant substitute specification, at page 16, lines 20-25, states that isocyanate compounds with a small molecular weight have superior permeability, making it easy to control the thickness of the cured layer that is formed.

Since the isocyanate compound is impregnated into the urethane, as described in the instant specification, the urethane group inside the urethane blade and the isocyanate group react to form an allophanate linkage, and the isocyanate groups mutually react to form a carbodiimide or isocyanurate. This is an important difference between the instant invention and Oki.

Oki does not disclose or suggest using 4,4'-diphenylmethanediisocyanate or even an isocyanate compound with a smaller molecular weight. To the contrary, Oki teaches using a perfluoroether, which has a larger molecular weight, as a treating agent. As a result, this agent forms only a coating layer on the surface of the urethane blade, because the perfluoroether is not able to penetrate into the urethane due, in part, to its molecular weight.

In sum, Applicants respectfully submit that Oki does not disclose or suggest impregnation of an isocyanate compound into the urethane, either expressly or inherently. This reference provides no hints as to impregnation and teaches away therefrom by disclosing the use of a higher molecular weight treating agent and by referring strictly to coating. Oki does not disclose or suggest using 4,4'-diphenylmethanediisocyanate, much

less heating it, or any isocyanate, to a temperature of from 80°C to 100°C for impregnation.

Cahill, Ferrigno, and Garlington cannot cure the deficiencies of Oki.

Neither of these secondary references discloses or suggests the features missing in Oki as discussed above.

In conclusion, Applicants respectfully submit that whether considered separately or in any combination, the documents of record fail to disclose or suggest the presently claimed elements. Wherefore, withdrawal of the outstanding rejection and passage of the application to issue are respectfully requested.

Applicants' undersigned attorney may be reached in our New York office by telephone at (212) 218-2100. All correspondence should continue to be directed to our below listed address.

Respectfully submitted,

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